Pesticides in agricultural irrigation-return flow in the Columbia Basin Project, 2002-04

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Outline

- Study design
- Summary of key results
  - Occurrence and distribution of pesticides
  - Timing of detections
  - Relation to other agricultural basins

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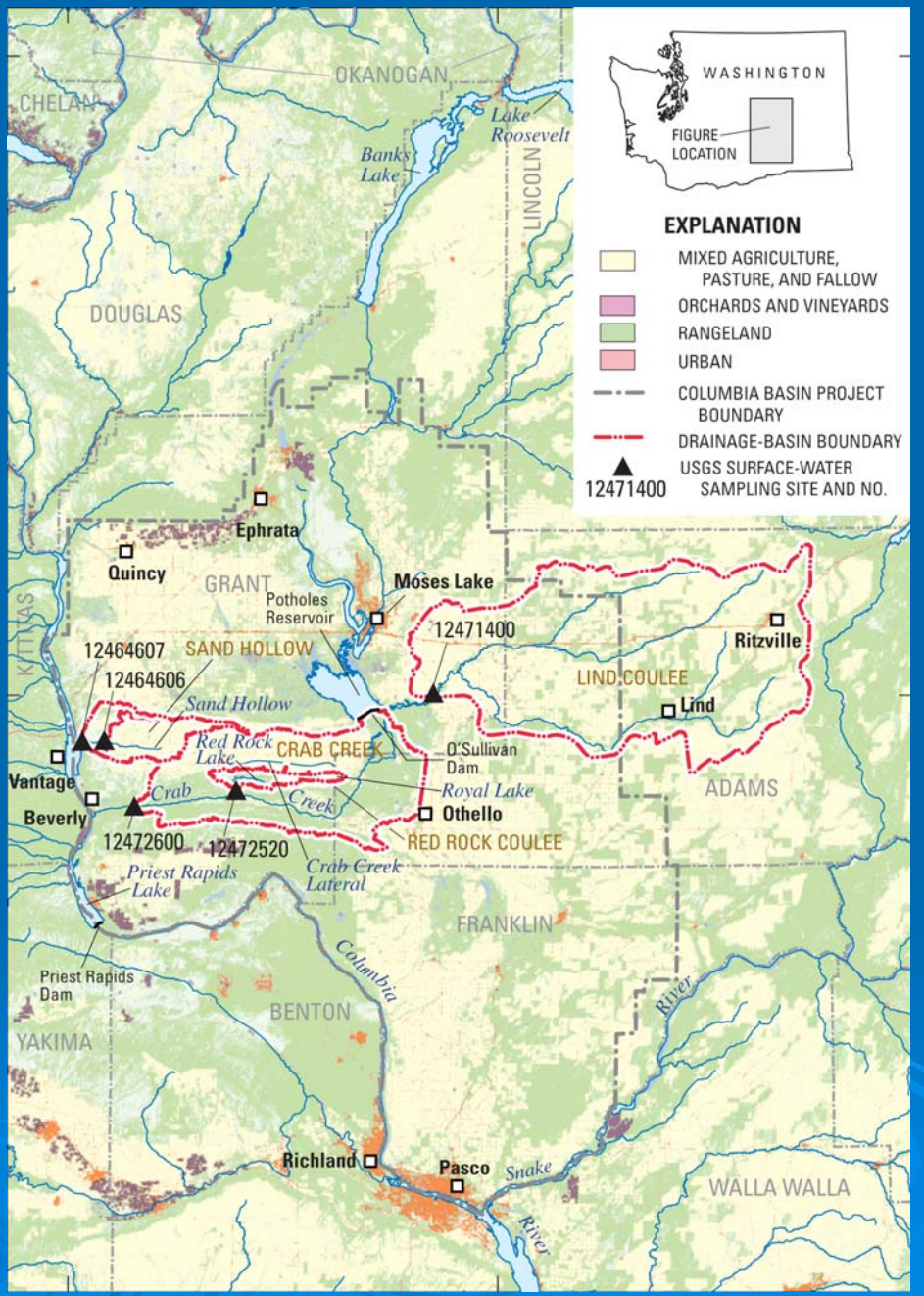
- 4 sites
- Samples collected from June 2002-October 2004
- 10 Samples during irrigation season and 2 during non-irrigation season
- Analyzed for nutrients, major ions, and 107 pesticides



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Occurrence and distribution of pesticides

- 42 pesticides and 5 metabolites detected

- Sand Hollow had the most compounds detected (37) and Crab Creek had the fewest compounds detected (28)

- Herbicides are more frequently detected than insecticides

- Concentrations of chlorpyrifos, lindane, azinphos-methyl and dinoseb exceeded aquatic-life criteria

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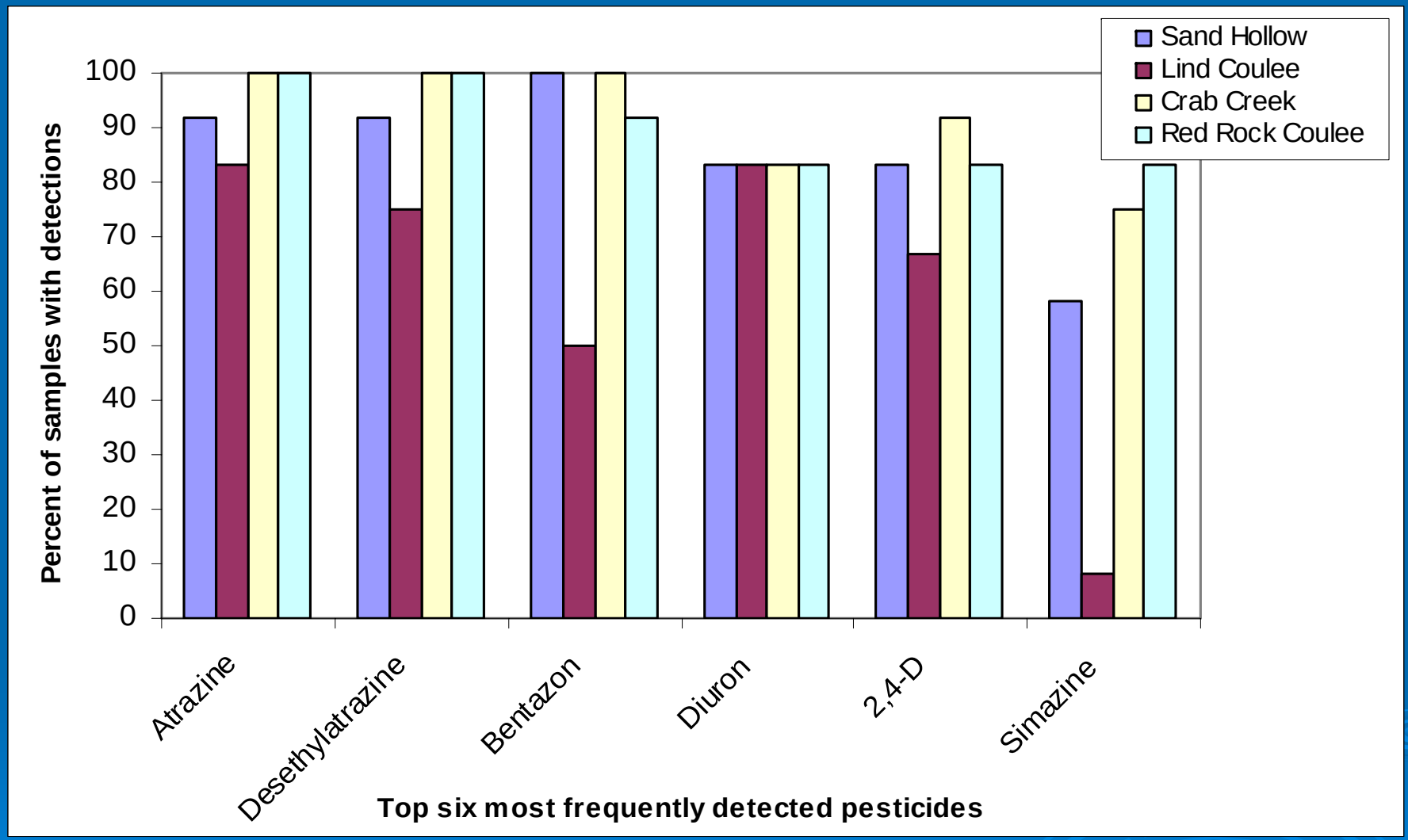

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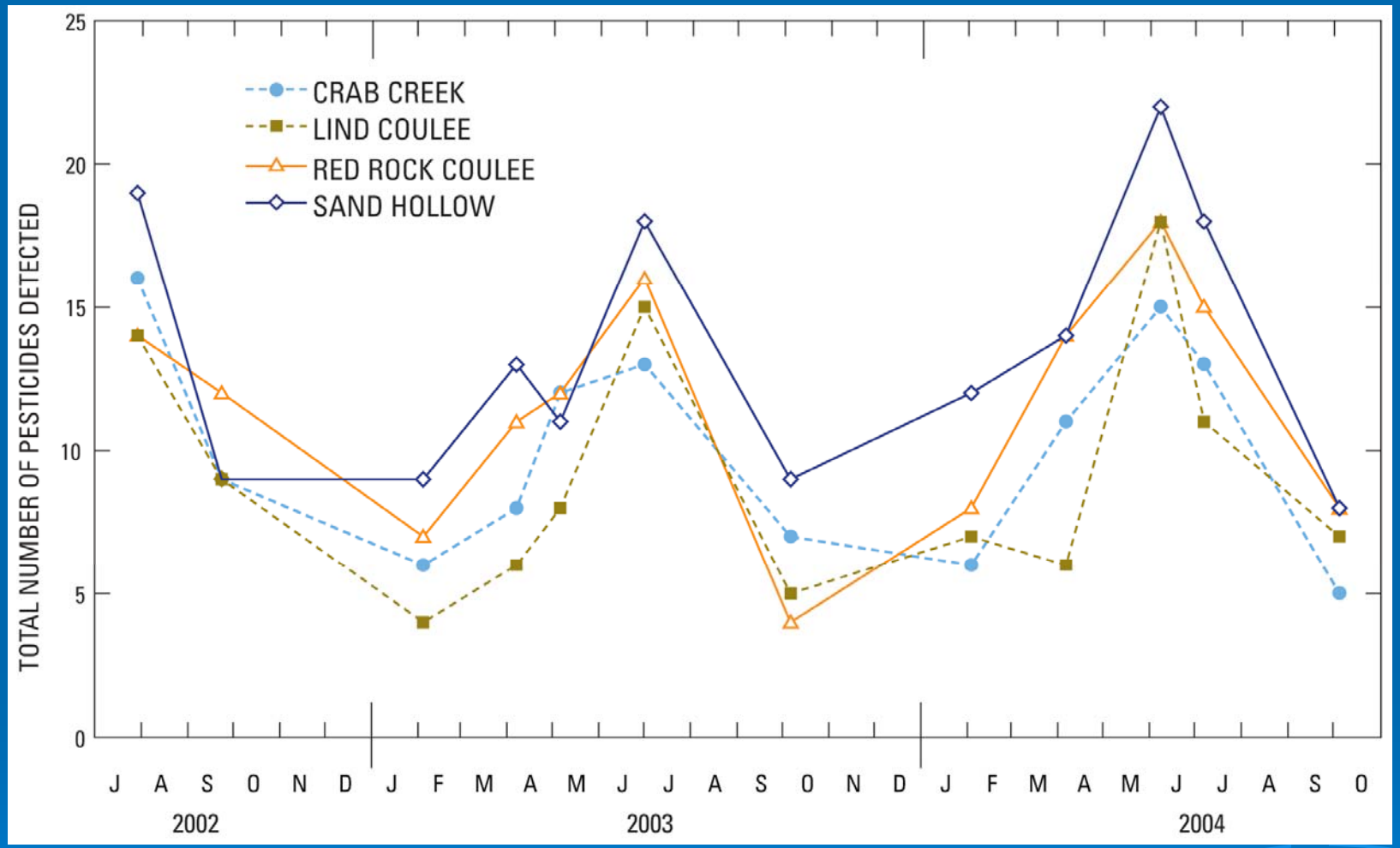

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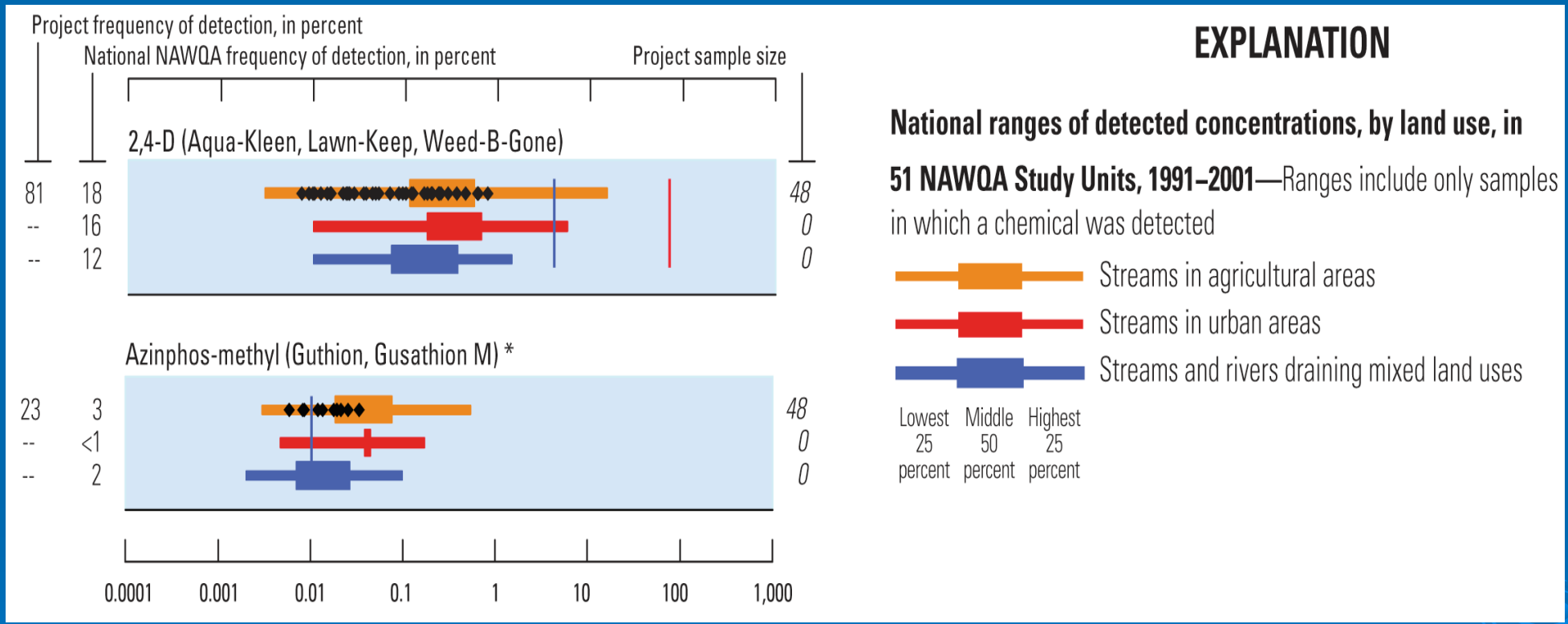

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Conclusions

- 42 pesticides and 5 metabolites detected
- Sand Hollow had the most compounds detected (37) and Crab Creek had the least (28)
- Atrazine, bentazon, diuron and 2,4-D were most frequently detected herbicides
- Chlorpyrifos and azinphos-methyl were the most frequently detected insecticides

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Conclusions

- Total number of pesticides detected was higher during the irrigation season than during non-irrigation season

- 3 insecticides (azinphos-methyl, chlorpyrifos, and lindane) and 1 herbicide (dinoseb) were detected at concentrations that exceeded aquatic-life criteria

- Pesticides detected in this study were at lower concentrations but higher frequency than other agricultural basins around the Nation

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